CLAIMS

1 A refractory wall structure including an array of tubular members and intervening refractory material arranged so that the tubular members protrude from a nominal internal wall surface defined by the refractory material by a distance smaller than the diameter of the tubular members.

2 A refractory wall structure according to claim 1 wherein the array of tubular members comprises an array of pipes connected for conveying, in use of a burner or furnace containing said wall structure, fluid for cooling the refractory wall structure.

3 A burner including:

first wall structure including a roof defining a first combustion chamber;

generally curved wall structure defining a second combustion chamber which operates as a cycloburner; and

slot port means arranged adjacent said roof through which the flow of hot combustible gases from said first chamber passes enroute to said second chamber where gas combustion takes place;

wherein at least said roof or said curved wall structure are provided by refractory wall structure according to claim 1 or 2, with said protruding tubular members exposed to the respective combustion chamber(s).

4 A burner according to claim 3 wherein the burner is a gasifier and said first combustion chamber is a gasification chamber.

5 A burner according to claim 3 wherein the burner is a solid fuel burner.

6 A solid fuel gasifier including:

first wall structure defining a gasification chamber;

generally curved wall structure defining a combustion chamber which operates as a cycloburner and where gas combustion takes place;

slot port means arranged for admitting a flow of hot combustible gases from said gasification chamber to said combustion chamber; and

moveable control damper means mounted for controlling said flow of hot gases through the port means whereby to manage the respective combustion profiles in said chambers.

7 A solid fuel gasifier according to claim 6 wherein said damper means is pivotally suspended from a roof segment of said first wall structure outside said combustion chamber.

8 A solid fuel burner according to claim 6 or 7 wherein said damper means includes a plurality of damper segments each selectively moveable between an open and a closed condition.

9 A solid fuel gasifier according to claim 6, 7 or 8 wherein at least a roof port of said wall structure, or said curved structure, is at least in part provided by refractory wall structure including an array of tubular members and intervening refractory material arranged so that the tubular members protrude from a nominal internal wall surface defined by the refractory material by a distance smaller than the diameter of the tubular members.

10 A solid fuel gasifier according to claim 9 wherein the array of tubular members comprises an array of pipes connected for conveying, in use of a burner or furnace containing said wall structure, fluid for cooling the refractory wall structure.